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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/323,512	06/01/1999	BRAD KINDIG	APTEX.003A	9272

758 7590 03/15/2002

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EXAMINER

COLBERT, ELLA

ART UNIT

PAPER NUMBER

2172

DATE MAILED: 03/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/323,512

Applicant(s)

KINDIG ET AL.

Examiner

Ella Colbert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 5,809,494) Nguyen in view of (US 5,893,120) Nemes.

With respect to claims 1, 8, and 30, Nguyen teaches receiving a new data record and a key that is associated with the new data record (col. 1, lines 50-60 and col. 2, lines 34-44); identifying one of the sections based upon the associated key of the new data record (col. 2, lines 50-67). Nguyen did not teach deleting one or more data records from the identified section if the identified section does not have sufficient space to contain the new data record or storing the new data record in the identified section. Nemes teaches deleting one or more data records from the identified section if the identified section does not have sufficient space to contain the new data record (col. 5, lines 16-34 and lines 53-57) and storing the new data record in the identified section (col. 4, lines 11-18). It would have been obvious to one having ordinary skill in the art at the time the invention was made to delete one or more data records from the identified section if the identified section does not have sufficient space to contain the new data record or storing the new data record in the identified section and to combine Nguyen's receiving a new data record

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and a key associated with the new data record with Nemes deleting one or more data records from the identified section if the identified section does not have sufficient space to contain the new data record and storing the new data record in the identified section because such a combination would allow Nguyen's system to save space since the space in a database is limited to the amount of data contained in a certain number of records in the database.

With respect to claims 2, 9, and 31, Nguyen did not teach deleting one or more data record includes identifying one or more data records according to a ranking function. Nemes teaches deleting one or more data record includes identifying one or more data records according to a ranking function (col. 6, lines 9-13 and lines 35-45. It would have been obvious to one having ordinary skill in the art at the time the invention was made to delete one or more records including identifying one or more data records according to a ranking function and to combine Nguyen's identifying one or more data records with Nemes' deleting one or more records including identifying one or more data records according to a ranking function because such a modification in Nguyen would allow Nguyen's system to save space since the space in a database and to have a finite sequence of steps (which is well known in the art)for performing the ranking function.

With respect to claims 3, 10, and 32, Nguyen did not teach the ranking function is a least recently used algorithm. Nemes teaches the ranking function is a least recently used algorithm (col. 7, lines 65-67 and col. 8, lines 1-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the ranking function as a least recently

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used algorithm and to combine Nguyen's identifying one or more data records with Nemes' ranking function is a least recently used algorithm because such a modification in Nguyen would allow Nguyen's system to have a finite sequence of steps (which is well known in the art) for performing the ranking function.

With respect to claim 4, Nguyen teaches the ranking function is a function of the statistical properties of the data being stored (col. 1, lines 49-60). Nemes teaches the ranking function is a function of the statistical properties of the data being stored (col. 1, lines 49-57 and col. 7, lines 52-64). Together Nguyen and Nemes teach the claim limitations of claim 4.

With respect to claims 5, 28, and 34, Nguyen teaches each of the plurality of sections is an integer multiple of the page size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 1, lines 33-39, col. 4, lines 39-67, and col. 5, lines 1-4).

With respect to claims 6, 11, and 35, Nguyen did not teach the sections is about the same page size that is used by an operating system to transfer data between a primary storage and a secondary storage. Nemes teaches of the sections is about the same page size that is used by an operating system to transfer data between a primary storage and a secondary storage. (col. 1, lines 66-67, col. 2, lines 1-15 and lines 53-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the sections is about the same page size that is used by an operating system to transfer data between a primary storage and a secondary storage and to combine Nguyen's primary and secondary storage with Nemes' sections being

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about the same page size that is used by an operating system to transfer data between a primary storage and a secondary storage because such a modification in Nguyen would allow Nguyen's system to save space since the space in a database since the space in a database is limited to the amount of data contained in a certain number of records.

With respect to claim 7, Nguyen teaches additionally comprising allocating a contiguous memory space to contain each of the sections (col. 4, lines 39-54). Nemes teaches additionally comprising allocating a contiguous memory space to contain each of the sections (col. 1, lines 66-67 and col. 2, lines 1-15 and lines 53-60). Together Nguyen and Nemes teaches the claim limitations of claim 7.

With respect to claim 10, Nguyen teaches, the ranking scheme identifies which ones of the data records are the least recently used (col. 4, lines 59-67 and col. 5, lines 1-12). Nemes teaches, the ranking scheme identifies which ones of the data records are the least recently used (col. 6, lines 9-11). Together Nguyen and Nemes teaches the claim limitations of claim 10.

With respect to claims 12, 13, and 20, Nguyen teaches a plurality of sections, each of the sections being about the same memory size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 3, lines 1-8); and a control program which receives a request for the storage of a data record, the control program selecting one of the sections based upon a key and storing the data record in the selection section (col. 1, lines 33-39 and lines 49-67 and col. 2, lines 1-15).

These claims are also rejected for the similar rationale given for claims 2, 6, 9, and 11.

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With respect to claims 14 and 21, Nguyen teaches, the ranking function determines a last access time for each of the data records or the selected sections (3, lines 9-19).

These claims are also rejected for the similar rationale given for claim 3.

With respect to claims 15 and 23, Nguyen teaches at least one of the sections includes at least one item of section information (col. 3, lines 20-32).

With respect to claims 16 and 24, Nguyen teaches, the section information includes the number of data records that are contained in the section (col. 3, lines 33-54).

With respect to claims 17 and 25, Nguyen teaches, the section information includes an offset from the beginning of the section to the first unused position within the section (col. 5, lines 13-27).

With respect to claims 18 and 26, Nguyen teaches, the section information includes a section number that is associated with the section (col. 4, lines 6-18).

With respect to claims 19 and 27, Nguyen nor Nemes teaches comprising a client application which provides the storage request of the data record and the key to the control program, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a client application which provides the storage request of the data record and the key to the control program in view of Nguyen's teaching of a record and a "key" field and Nemes' teachings of a key, a record, and application programs in col. 4, lines 39-44 and to modify in Nguyen and Nemes because such a modification would allow their systems to have interfaces which are related functions (for example providing a storage request or the key to a

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control program) through which a client application accesses the service of a server application which is well known in the art.

With respect to claim 22, Nguyen did not teach, each of the data records stores at least one user profile. Nemes teaches, each of the data records stores at least one user profile (col. 4, lines 26-37). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have each of the data records store at least one user profile and to combine Nguyen's section information with Nemes' each of the data records storing at least one user profile because such a modification in Nguyen's system would allow Nguyen's operating system to coordinate the activities of the computer system including the storage of data records with a user profile.

With respect to claim 29, Nguyen teaches, the size of each of the sections is about equal to the transfer size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 2, lines 50-65 and col. 5, lines 6-29).

This claim is also rejected for the similar rationale given above for claims 6 and 11.

With respect to claim 33, Nguyen teaches, the database occupies a single contiguous physical memory space(col. 2, lines 45-67).

With respect to claims 36 and 37, Nguyen teaches, a primary storage (col. 1, lines 66-67 and col. 2, lines 1-4); a secondary storage having a plurality of pages (col. 2, lines 4-9); a plurality of sections, wherein each of the sections is adapted to contain one or more data records, and wherein each of the sections resides in the secondary storage on one of the plurality of pages

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(col. 3, lines 1-32); and a control program which receives a request for the retrieval of a data record, the control program retrieving the data record from the secondary storage and storing the data record in the primary storage, wherein the retrieval operation reads at most one page from the secondary storage (col. 4, lines 6-29, col. 6, lines 61-67, and col. 7, lines 1-12).

With respect to claim 38, Nguyen teaches, a primary storage comprising a plurality of pages (col. 1, lines 66-67 and col. 2, lines 1-4); a secondary storage comprising a plurality of pages (col. 2, lines 4-9); and a database data structure having a plurality of sections, each of the sections residing on one of the pages in the primary storage and/or the secondary storage (col. 2, lines 1-15 and lines 50-67). Nguyen did not teach copying pages from the secondary storage to the pages in the primary storage and vice-versa. Nemes teaches, copying pages from the secondary primary storage to the pages in the primary storage and vice-versa (col. 8, lines 22-44). Nguyen did not teach, the selected section contains sufficient unused space to hold the data record, and wherein if the section does not have sufficient space, the database manager removes selected data records according to a ranking function. Nemes teaches, the selected section contains sufficient unused space to hold the data record, and if the section does not have sufficient space, the database manager removes the selected data records according to a ranking function. (col. 1, lines 49-57, col. 5, lines 16-34 and lines 53-57 and col. 7, lines 52-64). It would have been obvious to one having ordinary skill in the art at the time the invention was made to copy pages from secondary primary storage to the pages in the primary storage and vice-versa and to have the selected section contain sufficient unused space to hold the data record, and

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if the section does not have sufficient space, the database manager removes the selected data records according to a ranking function and to combine Nguyen's secondary storage with Nemes' copying pages from secondary storage to the pages in the primary storage and vice-versa and to have the selected section contain sufficient unused space to hold the data record, and if the section does not have sufficient space, to have the database manager remove selected data records according to a ranking function because such a modification in Nguyen would allow Nguyen's system to save space since the space in a database is limited to the amount of data contained in a certain number of records in the database. Nguyen nor Nemes teaches, a client application, a caching subsystem, or a database manager for receiving requests from the client application to store a data record in the database data structure, wherein the database manager selects one of the sections and stores the data record in the selected section, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a client application, a caching subsystem, or a database manager for receiving requests from the client application to store a data record in the database data structure, wherein the database manager selects one of the sections and stores the data record in the selected section and in view of Nguyen's teachings of a database, storage, and records in col. 1, lines 33-48 and a data structure in col. 1, lines 49-50 and Nemes' teachings of records and storage to modify in Nguyen and Nemes because such a modification would allow their systems to have a database manager that is familiar with the content of the client application and a special memory subsystem in which frequently used data values are duplicated for quick access which is well known in the art.

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It is well known in the art that a memory cache stores the contents of frequently accessed RAM locations and the addresses where data items are stored and when the processor references an address, the cache checks to see whether it holds that address.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Burkes et al (US 5,604,903) teaches garbage collection and storage.

Inquires

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ella Colbert whose telephone number is (703)308-7064. The examiner can normally be reached Monday through Thursday from 6:30 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu, can be reached on (703)305-4393.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703)746-7238 or (703)746-7239, (for formal communications intended

for entry).

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Or:

(703)746-7240 (for informal or draft communications, please label

“PROPOSED” or “DRAFT”).

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, Virginia., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (703)305-3900.


E. Colbert
March 8, 2002


JEAN M. CORRIELUS
PRIMARY EXAMINER